

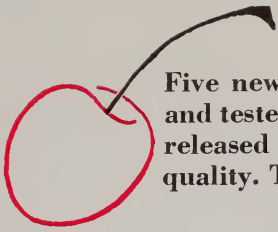


NEW SWEET CHERRY VARIETIES

Recommended for Commercial Trial



R. M. BROOKS
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Five new sweet cherry varieties which have been developed and tested at the California Experiment Station are now being released for commercial trial. All are productive and of high quality. This bulletin discusses their characteristics.

MONA is a red to dark-red cherry. It is larger, firmer, and less tart than Black Tartarian, which it is intended to replace. It ripens at the same time as Black Tartarian. The tree is spreading.

LARIAN is a glossy, dark-red cherry, superior to Black Tartarian in size, firmness and flavor; it matures more than a week earlier than Bing. This new variety is relatively free of fruit doubles and is more resistant to cracking than Bing.

JUBILEE is a high-quality supplement to Bing, red to dark red and nearly as firm as the latter but produces practically no doubles. Its cracking-resistance is similar to that of Bing. It ripens a few days before that variety and has a long harvest season.

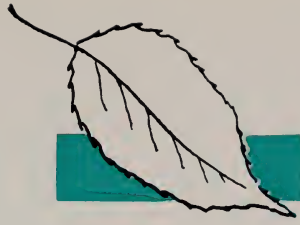
BERRYESSA is a cream-colored, red-blushed cherry which may supplement or replace Royal Ann. It is superior to Royal Ann in size and flavor, ripens earlier, and is more resistant to bruising. It produces relatively few fruit doubles.

BADA is a glossy, cream-colored cherry with medium to high blush, being a supplement or replacement for Royal Ann, since it does not produce fruit doubles and has a high resistance to fruit-cracking. Its average size is near that of Royal Ann. Bada is suggested as a companion for Berryessa, since both mature at the same time.

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OCTOBER, 1964



FIVE NEW SWEET CHERRY varieties are hereby introduced for commercial trial. Mona, Larian, and Jubilee, with red to dark-red fruit, and Berryessa and Bada, with cream-colored, red-blushed, Royal Ann-type fruit, originated in the cherry-breeding project started by members of the Department of Pomology in 1934. More than 10,000 seedling trees have been handled in the program of breeding, selection, and testing which developed these varieties. Trial plots are maintained at Davis, Winters, the Deciduous Fruit Field Station at San Jose, and in several cherry-growing districts of the state.

Each standard sweet cherry variety presently grown in California, while possessing many good features, also has one or more defects. For example, early-maturing Chapman, Burbank, and Black Tartarian are tender-fleshed. Burbank is subject to heavy losses due to fruit-cracking. Black Tartarian trees produce small fruit when burdened with heavy crops, are too upright in growth, and are seriously affected by cherry crinkle and deep suture.

Bing and Royal Ann (Napoleon) often produce high percentages of fruit doubles in the interior valleys. Bing is also seriously affected by crinkle and deep

suture, and often produces a high percentage of fruit with indented fruit sutures. Royal Ann is subject to heavy losses due to fruit-cracking.

With Republican, the great fault is small fruit. Lambert cracks badly when there are late rains and matures too late for important California markets.

Bing, Royal Ann, and Lambert are interincompatible and will not produce crops when planted together unless other effective pollinating varieties are provided.

The new varieties also have imperfections, but each has a quality or qualities superior to those of the standard varieties under the localized environment of one or more of the cherry-growing districts.

Jubilee and Bada are presently free of known virus diseases. The other new introductions are known to carry a latent virus which is considered of minor importance in sweet cherry culture.

The apparent superior characteristics and weaknesses of the new varieties are discussed in the following descriptions. It should be remembered that the limited tests on which these observations are based do not assure their success. The introduction of these new varieties at this time is for commercial trial.

Propagating wood of the new varieties may be purchased in limited quantity from the Foundation Plant Materials Service, University of California, Davis. The manager of this service can supply a list of nurserymen handling them. Address all inquiries to: Manager, Foundation Plant Materials Service, Department of Viticulture and Enology, University of California, Davis, California 95616.



Fig. 1. MONA.

MONA

Mona is introduced as a supplement or replacement for Black Tartarian. The fruit is larger and firmer than Black Tartarian, the tree more spreading. The bloom period of Mona coincides more closely with that of Bing and of Royal Ann than does the bloom period of Black Tartarian.

Mona resulted from a cross made in 1940 between La Cima (female) and Chapman. It has been tested as University of California Selection 30-9a.

At Davis, Mona (fig. 1) ripens about a day later than Black Tartarian and 17 days before Bing (table 1). The skin is glossy, red to dark red at maturity, and not as tender as that of Black Tartarian. The average fruit diameter of Mona is larger than that of Black Tartarian (fig. 2) and nearly as large as that of Bing.

The fruit of Mona is heart-shaped when viewed with the suture side directly toward or away from the observer, being

smooth, regular, symmetrical, and very slightly (0.50 mm) longer than broad (figs. 1, 3). In most specimens the suture is smooth and inconspicuous. When the fruit is viewed with the suture to one side, it appears round-conic or conic. In some individual fruits the suture side is less developed and the stems appear off-center toward the suture side.

The outline of the fruit, as seen when the apical end is toward the viewer, is oval or slightly flattened on the suture side (fig. 3). The stylar scar averages 1.19 mm in diameter, is smooth, inconspicuous, and may be at the apex or slightly off-center from the apex, being closer to the suture side. The apical end is rounded or pointed enough so that the fruit will not stand alone on its apex.

The cavity is relatively shallow and of medium width (figs. 1, 3).

The pedicel (stem) is usually long, slender, light green, and firmly attached

to the fruit (figs. 1, 3). About the same pull is required to separate the stem from the fruit as with Royal Ann; and, as with Royal Ann, some Mona fruits are torn at the cavity in the process.

The red to dark-red flesh is more firm than that of Black Tartarian but not as firm as Bing. The flavor is sweet and mild, being less tart than Black Tartarian. In most years the fruit of Mona has been considered more attractive than Black Tartarian and superior in flavor. The juice is red.

The smooth stone is relatively large and ranges from quite free to slightly clinging to the flesh (figs. 1, 3).

Mona is subject to a moderate amount of fruit-cracking when exposed to late rains. Some fruit doubles are produced in the interior valleys in years when doubling is a serious problem with Bing and Royal Ann. Doubling has not been noted in this variety in the coastal counties.

Mona trees are very productive, vigorous, and upright when young, becoming upright-spreading. Most of the trees observed were on mahaleb (*Prunus mahaleb* L.) rootstock, with which they make smooth unions. The oldest tree at Davis is one 20 years old on Stockton Morello (a variety of *P. cerasus* L.) rootstock. The trunk above the bud union is 22.5 inches in diameter, an average of 1.12 inches of diameter growth per year. The oldest Mona tree on mahaleb rootstock is 13 years old, with a trunk diameter of 16 inches—an average of 1.23 inches of diameter growth per year. For comparison, a nearby vigorous 13-year-old Black Tartarian tree on mahaleb rootstock measured 14 inches in trunk diameter, an average of 1.08 inches of diameter growth per year.

The leaves of Mona trees are longer than average but only of medium width

(figs. 1, 11a). The petioles (leafstalks) are medium in length and thickness and have a few to many fine, scattered hairs. The glands, located at the distal end of the petiole, are variable in size and shape, but are most often relatively large, oval, or reniform.

At Davis, Mona reaches full bloom three or four days later than Black Tartarian and about a day before Bing (fig. 10). The bloom period overlaps with those of Bing, Royal Ann, Van, Larian, and Berryessa. Controlled pollination tests indicate that Mona may be satisfactorily cross-pollinated by Berryessa, Van, Starking Hardy Giant, Royal Ann, Early Burlat (official name; synonyms, Hatif Burlat, Bigarreau Hatif de Burlat), Moreau¹ (official name; synonyms, Bigar-

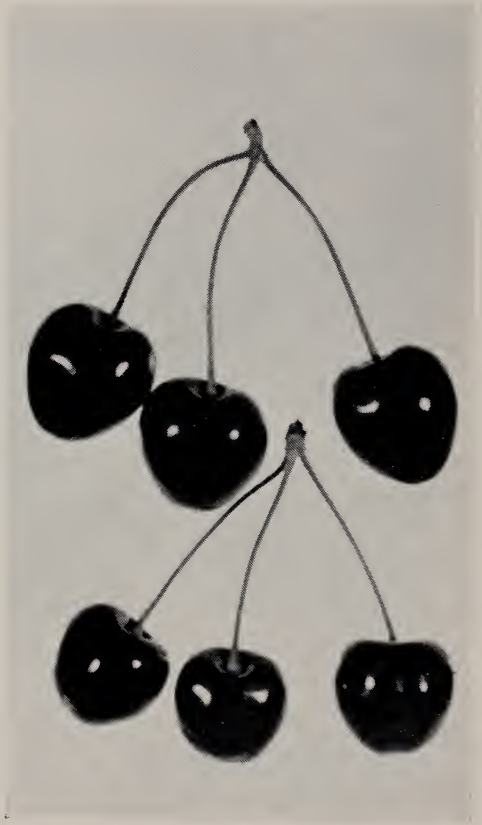


Fig. 2. Comparison of Mona fruit (upper) with Black Tartarian (lower).

¹ H. W. Fogle. 1962. Changes in cherry list. Fruit Varieties and Hort. Digest 16(2):34.

TABLE 1

COMPARISON OF NEW WITH STANDARD VARIETIES* OF

Factor	Variety			
	Chapman		Black Tartarian	
Tree characteristics (Bearing trees):				
Type of growth.....	Upright-spreading		Upright	
Vigor.....	Vigorous		Very vigorous	
Trunk diameter (inches) divided by age:				
Mahaleb rootstock.....			1.06	
Mazzard rootstock.....	0.93		1.01	
Productivity.....	Productive		Productive	
Leaves:				
Length of blade (inches).....	4.96		6.02	
Width of blade (inches).....	2.76		3.11	
Length of petiole (inches).....	2.16		2.76	
Fruit characteristics, 8-year av. (1956-1963):				
	Av.	Range	Av.	Range
Maturity date (eating ripe).....	5/9	5/1-5/14	5/24	5/18-5/29
Pedicel length (inches).....	2.07	1.65-2.48	1.66	1.38-2.36
Fruit size:				
Row size†.....	13.5	15.0-12.0	13.0	16.0-11.5
Diameter (inch).....	0.86	0.78-0.97	0.89	0.72-1.01
Fruit shape.....	Cordate		Cordate	
Fruit suture.....	Inconspicuous		Conspicuous	
Skin color.....	Red to black		Red to black	
Skin texture.....	Very tender		Very tender	
Flesh color.....	Red to dark red		Dark red	
Flesh texture.....	Soft		Soft	
Juice color.....	Red		Red to dark red	
Flavor.....	Sweet, mild		Sweet, tart	
	Length	Width	Length	Width
Stone size (inch).....	0.45	0.36	0.41	0.35
Stone adhesion to flesh.....	Free to slightly clinging		Free to slightly clinging	

* Varieties are listed in the order of fruit maturity except that the three cream-colored cherries have been placed together for easy comparison.

† The row-size number is that number of cherries of uniform size whose aggregate width equals 11.5 inches.

reau Moreau, Bigarreau de St. Charmez, Souvenir de Charmes, Bigarreau Sandrin), Black Tartarian, Republican, and Chapman. In some years, however, Chapman may bloom too early for sufficient overlap with Mona. Mona pollen has given satisfactory fruit sets on Bing, Jubilee, Early Burlat, Royal Ann, and Berryessa.² On the basis of this assumption, Bing and Jubilee should serve as effective pollinators for Mona, and Mona pollen should effectively cross-pollinate these varieties: Van, Starking Hardy Giant,

Moreau, Black Tartarian, and Chapman. In its few commercial plantings, Mona has found favor with growers, who report that it is the easiest of all varieties to pick, and that, size for size, it has brought higher prices than Black Tartarian.

The fresh fruit market apparently is the best outlet for Mona. It has proved to be a satisfactory brining cherry, however, and is far superior to Black Tartarian for that purpose. It has been rated excellent as a canning cherry.

² Past experience has shown that if the pollen of a sweet cherry variety, A, will set fruit on another variety, B, it is reasonably safe to assume that the pollen of B will, in turn, serve as a satisfactory pollinator for A.

SWEET CHERRIES AT DAVIS, CALIFORNIA

Variety							
MONA		LARIAN		JUBILEE		Republican	
Upright-spreading Vigorous		Upright-spreading Moderately vigorous		Upright-spreading Vigorous		Upright-spreading Vigorous	
1.23		0.75 0.77		1.04		1.21 0.92	
Very productive		Moderately productive to productive		Productive		Very productive	
7.05		6.77		6.38		5.08	
2.87		3.23		2.95		2.76	
2.36		2.12		2.68		1.93	
Av.	Range	Av.	Range	Av.	Range	Av.	Range
5/25	5/21—5/30	5/30	5/22—6/7	6/5	5/23—6/14	6/10	5/31—6/20
1.97	1.57—2.44	1.42	0.98—1.65	1.20	0.94—1.54	1.30	0.94—1.50
12.0	13.0—11.5	11.3	13.0—10.5	11.4	12.5—10.5	13.3	16.0—12.0
0.97	0.89—1.01	1.02	0.89—1.10	1.02	0.93—1.10	0.87	0.72—0.97
Cordate		Round-cordate		Cordate		Round-cordate	
Inconspicuous		Inconspicuous		Inconspicuous to conspicu- ous		Conspicuous	
Red to dark red		Dark red		Red to dark red		Dark red to black	
Tender		Tender		Tender to moderately tender		Tender	
Red to dark red		Red to dark red		Red to dark red		Dark red	
Tender to moderately firm		Moderately firm to firm		Moderately firm to firm		Firm	
Red		Red to dark red		Light red to red		Red	
Sweet, mild		Sweet, mild to tart		Sweet, mild		Sweet, slightly bitter	
Length	Width	Length	Width	Length	Width	Length	Width
0.50	0.37	0.44	0.36	0.47	0.37	0.40	0.34
Free to slightly clinging		Slightly clinging		Free to slightly clinging		Slightly clinging	

(Continued on page 8)



Fig. 3. Mona. Bleached fruit removed from brine. Left to right: Fruit with suture side directly toward observer; suture to one side; median lengthwise section; apical end.

TABLE 1—continued

COMPARISON OF NEW WITH STANDARD VARIETIES* OF

Factor	Variety			
	BERRYESSA		BADA	
Tree characteristics (Bearing trees):				
Type of growth.....	Upright-spreading		Upright-spreading	
Vigor.....	Vigorous		Moderately vigorous	
Trunk diameter (inches) divided by age:				
Mahaleb rootstock.....	1.00		0.67	
Mazzard rootstock.....	1.05			
Productivity.....	Productive		Productive to very productive	
Leaves:				
Length of blade (inches).....	6.42		5.47	
Width of blade (inches).....	3.35		2.99	
Length of petiole (inches).....	2.76		2.09	
Fruit characteristics, 8-year av. (1956-1963):				
	Av.	Range	Av.	Range
Maturity date (eating ripe).....	6/4	5/28-6/13	6/6	5/29-6/20
Pedical length (inches).....	1.57	1.18- 2.05	1.47	1.22- 1.85
Fruit size:				
Row size†.....	11.0	12.5 -10.5	11.6	12.5-10.5
Diameter (inch).....	1.05	0.93- 1.10	1.00	0.93- 1.10
Fruit shape.....	Broad-cordate		Cordate	
Fruit suture.....	Inconspicuous		Inconspicuous	
Skin color.....	Cream, blush		Cream, blush	
Skin texture.....	Tender to moderately tender		Moderately tender	
Flesh color.....	Cream		Cream	
Flesh texture.....	Moderately firm to firm		Moderately firm to firm	
Juice color.....	Clear		Clear	
Flavor.....	Sweet, mildly tart		Sweet, mild	
	Length	Width	Length	Width
Stone size (inch).....	0.47	0.38	0.46	0.37
Stone adhesion to flesh.....	Slightly clinging		Free to slightly clinging	

* Varieties are listed in the order of fruit maturity except that the three cream-colored cherries have been placed together for easy comparison.

† The row-size number is that number of cherries of uniform size whose aggregate width equals 11.5 inches.

LARIAN

Larian is being released as a supplement or replacement for either Black Tartarian or Bing. The fruit is larger, firmer, and has a better flavor than Black Tartarian. It is relatively free of fruit doubles and is more resistant to cracking than Bing. The fruit matures more than a week earlier than Bing.

Larian resulted from a cross made in 1946 between Lambert (female) and University of California Selection 50 (Bing × Bush Tartarian). It has been tested as University of California Selection 53-20.

At Davis, Larian (fig. 4) ripens an average of six days later than Black Tartarian and twelve days before Bing (table 1). The skin is glossy, dark red, similar to Bing in texture, and resistant to bruising. The average fruit diameter is larger than that of Bing and of Black Tartarian. The relatively lighter crops produced by Larian, compared with those of Bing and Black Tartarian, undoubtedly account for some of the difference in size.

The fruit is round heart-shaped when viewed with the suture side directly toward or away from the observer; it is

SWEET CHERRIES AT DAVIS, CALIFORNIA

Variety								
Royal Ann (Napoleon)			Bing		Van		Lambert	
Upright-spreading			Upright-spreading		Upright-spreading to spreading		Upright-spreading	
Vigorous			Vigorous		Vigorous		Vigorous	
1.06			1.46		1.43		1.07	
0.92			0.85		1.05		0.84	
Productive to very productive			Productive		Very productive		Productive	
6.06			6.14		7.20		6.22	
2.83			2.63		3.23		3.03	
1.85			1.77		1.77		2.52	
Av.	Range		Av.	Range	Av.	Range	Av.	Range
6/10	6/4	— 6/14	6/11	6/1	— 6/21	6/11	6/2	— 6/22
1.38	0.94	— 1.61	1.29	0.98	— 1.50	1.07	0.83	— 1.50
11.5	14.5	—10.5	11.8	12.5	—10.5	12.3	13.5	—11.5
1.01	0.80	— 1.10	0.98	0.93	— 1.10	0.95	0.86	— 1.01
Cordate			Broad, round-cordate		Cordate, blocky		Cordate, pointed	
Moderately conspicuous			Conspicuous		Conspicuous		Conspicuous	
Cream, bluish			Dark red to almost black		Dark red to almost black		Dark red to almost black	
Moderately tender			Tender to moderately tender		Tender to moderately tender		Tender to moderately tender	
Cream			Red to dark red		Light red to red		Red to dark red	
Moderately firm to firm			Firm		Firm		Firm to very firm	
Clear			Red		Light red to red		Light red to red	
Sweet, tart			Sweet, tart		Sweet, tart		Sweet, tart	
Length	Width		Length	Width	Length	Width	Length	Width
0.44	0.33		0.44	0.34	0.39	0.36	0.42	0.32
Slightly clinging			Slightly clinging		Free to slightly clinging		Slightly clinging	

smooth and symmetrical, and averages 3.0 mm greater in width than in length (fig. 4). During the same seasons, Bing and Black Tartarian fruits averaged only 0.52 and 1.90 mm, respectively, greater in width than in length. The fruit sutures are usually inconspicuous, but in some years a small percentage will be slightly indented. The proportion of fruit with indented sutures does not, however, approach that of Bing or Black Tartarian. With the suture to one side, the fruit appears round-conic, but in many specimens the suture side may be more protuberant. This is a distinguishing characteristic of this variety. The outline of the fruit, as seen with the apical end toward the viewer, is oval but may be slightly flattened on the suture side. The stylar scar averages 1.08 mm in diameter,

is smooth or indented, conspicuous, and is slightly off-center from the apex, being closer to the suture side. The apical end is rounded or pointed enough so that the average specimen will not stand alone on its apex.

The cavity is shallow to medium in depth and medium to fairly wide (fig. 4).

Pedicels are medium in length and thickness, green, and well attached to the fruit (fig. 4).

The red to dark-red flesh is meaty, fine-textured, moderately juicy, and moderately firm to firm. It usually has about the same firmness as Royal Ann, but is not as firm as Bing. The juice is red to dark red. The excellent flavor ranges from sweet and mildly tart to sweet and mild. In most years it is less tart than Bing.



Fig. 4. LARIAN.

The stone is medium to small, smooth, and slightly clinging to the flesh (fig. 4).

Larian is very resistant to fruit-cracking and has produced no doubles in most years and very few in years when doubling was a serious problem with Bing and Royal Ann.

The trees are moderately vigorous, upright when young, becoming upright-spreading. The original seedling tree (on its own roots) has completed its fifteenth growing season and has a trunk diameter of 11.5 inches, averaging 0.77 of an inch of diameter growth per year. For comparison, three Bing trees on mazzard rootstock, ranging in age from 14 to 18 years, averaged 14 inches in trunk diameter, increasing an average of 0.85 of an inch per year. The original Larian tree was slow in coming into production and has varied from moderately productive to productive. Younger Larian trees propagated on mahaleb stock are as vigorous and productive as comparable standard varieties on mahaleb.

Larian leaves (figs. 4, 11b) are large

and distinctly lanceolate. Their serrate margins have relatively large teeth and provide a distinguishing characteristic for this variety. The petioles are short to medium, stocky, and have a few to many fine scattered hairs. One or two relatively large, oval or reniform, purplish glands are located at the distal ends of the petioles.

Larian reaches full bloom with Bing, and its bloom period also overlaps those of Van, Mona, Royal Ann, and Berryessa sufficiently for cross-pollination (fig. 10). Controlled pollination tests indicated that Larian may be effectively cross-pollinated by Bada and Bing. Larian pollen in controlled tests gave good fruit sets on Bada, Bing, and Jubilee. It is reasonably safe, therefore, to assume that Jubilee will also effectively cross-pollinate Larian.³

Larian is recommended as an excellent variety for shipping and fresh-fruit consumption. Although canning and brining tests are limited, it is apparently satisfactory for these outlets.

³ See footnote 2 on p. 6.

JUBILEE

Jubilee (see cover) is being released as a supplement or replacement for Bing because it produces practically no fruit doubles, the fruit is larger, and ripens several days before Bing. The fruit is very attractive and delicious, and maintains its high quality for a relatively long period at room temperature.

Jubilee resulted from a cross made in 1940 between Lambert (female) and Napa Long Stem Bing. It has been tested as University of California Selection 26-15.

Jubilee ripens an average of six days earlier than Bing at Davis (see table 1). The skin is glossy, red to dark red at maturity, and similar to Bing in texture and in resistance to bruising. The average fruit diameter is larger than for comparable Bing fruits.

The fruit is heart-shaped when viewed with the suture side directly toward or away from the observer, being smooth, very symmetrical, and averaging slightly

(0.50 mm) longer than broad (cover and fig. 5).

The sutures are variable as in Bing, ranging from inconspicuous to conspicuous and are slightly indented. The percentages of Jubilee fruit with conspicuous or indented sutures, however, are much lower than for Bing. With the suture to one side, the fruit appears round-conic, but in many specimens the fruit is flattened (less developed) on the suture side near the cavity. This causes the cavity to slant down and the pedicel to tilt toward the suture side (fig. 5). Bing cherries have this same characteristic.

The outline of the fruit, as seen with the apical end toward the viewer, is oval, but usually slightly flattened on the suture side to give a "D" shape (fig. 5). The stylar scar averages 1.19 mm in diameter, is smooth and inconspicuous, and is almost invariably located at the true apex, a distinguishing characteristic. (In most cherries, the stylar scar is off-center from



Fig. 5. Jubilee. Bleached fruit removed from brine. Left to right: Fruit with suture side directly toward observer; suture to one side; median lengthwise section; apical end.

the apex, being closer to the suture side.) The apical end is somewhat pointed so that the fruit will not stand alone on its apex.

The cavity is medium in depth and width, being similar to Bing (fig. 5).

The pedicels (cover and fig. 5) are green, range from short to medium in length, averaging a little shorter and thicker than Bing pedicels. They are firmly attached to the fruit as in Bing; occasionally a cavity will be torn in stemming. The flange that attaches the base of the pedicel to the cavity is relatively large and provides another distinguishing characteristic for this variety.

The red to dark-red flesh is meaty, fine-textured, moderately juicy, and moderately firm to firm but not quite as firm as Royal Ann or Bing. The juice is light red to red. The excellent flavor ranges from very sweet and mild to sweet and mildly tart, being less tart than Bing.

The stone is medium large, ridged, has a prominent suture, and is free to slightly clinging to the flesh (fig. 5).

Jubilee has about the same resistance to cracking as Bing. It has produced practically no fruit doubles even in years when doubling was a serious problem with fruits of Bing and Royal Ann.

Jubilee trees are similar to Bing trees in growth and appearance. They are productive, vigorous and upright-spreading. The average trunk diameter of three 9-year-old Jubilee trees on mahaleb rootstock at Davis was 9.33 inches, giving an average of 1.04 inches of diameter growth per year. For comparison, three 13-year-old Bing trees on mahaleb rootstock at Davis had an average trunk diameter of 19.0 inches, giving 1.46 inches of diameter growth per year. In a commercial orchard in San Joaquin County, ten 8-year-old Jubilee trees on mahaleb root-

stock had an average trunk diameter of 5.52 inches, showing 0.69 of an inch of diameter growth per year. Six adjacent Bing trees of the same age and on the same rootstock had trunk diameters averaging 5.17 inches, giving 0.64 of an inch of diameter growth per year.

The leaves (cover and fig. 11c) are large and have long, thin to medium-thick petioles, with a few to many fine, scattered hairs. Some petioles are glandless, but the majority have one or two glands near the distal end. The glands are variable in size and shape, but average relatively small to medium and are oval or reniform.

Jubilee has a late average bloom period (fig. 10). Evidently the buds have a greater chilling requirement than most standard varieties, and the bloom period is delayed after mild winters. The cropping record indicates, however, that there is sufficient overlap in the bloom periods of Jubilee, Bing, Royal Ann, and Lambert for adequate cross-pollination. Controlled pollination tests indicated that Jubilee may be effectively cross-pollinated by Bing, Mona, Larian, Berryessa, Bada, Lambert, Royal Ann, Starking Hardy Giant, Early Burlat, and Moreau. It is assumed that Jubilee, in turn, will serve as an effective pollinator for these varieties.⁴

Jubilee may be harvested over a long period since it has excellent flavor from the time it is light red to fully ripe. The quality is maintained on the tree even during very hot weather. After harvest it retains its high quality for a number of days at room temperature.

Jubilee is an excellent variety for shipping, fresh-fruit consumption, canning, and brining. For best brining quality, it should be harvested before the skin is dark red.

⁴ See footnote 2 on page 6.

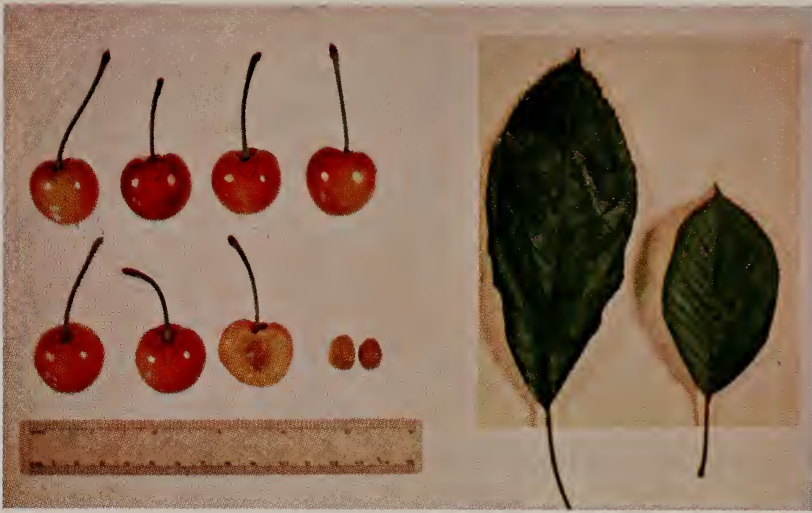


Fig. 6. BERRYESSA.

BERRYESSA

Berryessa is introduced as a supplement or replacement for Royal Ann. It produces relatively few fruit doubles, and its fruit has excellent quality; it is larger than Royal Ann and ripens nearly a week earlier.

Berryessa resulted from a cross made in 1940 between a selection (female) of unknown parentage and Bush Tartarian. It has been tested as University of California Selection 23A-3a.

Berryessa (fig. 6) ripens an average of six days before Royal Ann at Davis (table 1). The skin is glossy, cream-colored with medium to high blush. It is similar to Royal Ann in texture, but more resistant to bruising. The average fruit diameter of Berryessa is larger than that of any other sweet cherry in the variety collection at Davis.

The fruit is heart-shaped when viewed with the suture side directly toward or away from the observer, being smooth, regular, symmetrical, and about 2.0 mm broader than long (fig. 7). The suture is inconspicuous. With the suture to one

side, the fruit appears round-conic and is well developed on both the suture (ventral) and dorsal sides.

The outline of the fruit, as seen with the apical end toward the viewer, is oval, smooth, and symmetrical. The stylar scar averages 1.21 mm in diameter, is conspicuous, may be slightly protruding, and is usually off-center from the apex, being closer to the suture side (fig. 7). The apical end is rounded or pointed enough so that the fruit will not stand alone on its apex.

The cavity is medium in depth and width (figs. 6, 7).

The pedicels range from medium to long, are relatively thick, green, and firmly attached to the fruit (figs. 6, 7). They can, however, be separated from the fruit with less pull than Royal Ann stems; consequently there is little or no tearing of the cavity in stemmings.

The cream-colored flesh is moderately firm to firm, about the same as that of Royal Ann. It is meaty, fine-textured, and moderately juicy. The juice is clear. The



Fig. 7. Berryessa. Bleached fruit removed from brine. Left to right: Fruit with suture side directly away from observer; suture to one side; median lengthwise section; apical end.

flavor is sweet and mildly tart, and considered superior to Royal Ann.

The stone is medium large and slightly clinging to the flesh, but the fruit is satisfactory for pitting (figs. 6, 7).

Berryessa is subject to some fruit-cracking when exposed to late rains. It also produces relatively low percentages of fruit doubles in the San Joaquin County districts and at Davis in years when doubling is a serious problem with Royal Ann and Bing. In most years, however, Berryessa has been free of fruit-cracking and doubling.

Berryessa trees start bearing at an early age, are productive, vigorous, and upright-spreading, becoming a little more spreading than Royal Ann when 8 to 10 years old. A 13-year-old tree on mahaleb roots and a 10-year-old tree on mazzard roots had 13.0- and 10.5-inch trunk diameters, respectively, giving 1.00 and 1.05 inches of diameter growth, respectively, per growing season. For comparison, two 10-year-old Royal Ann trees on mahaleb rootstock had an average trunk diameter of 10.4 inches, giving 1.04 inches of diameter growth per year.

The leaves are large, distinctly oblanceolate, and have long, medium-thick petioles (figs. 6, 11*d*). Most petioles are hairless, but an occasional one has a few fine, scattered hairs. Some petioles are

glandless, but the majority have one or two relatively small, round, or oval glands at the distal end.

Berryessa blooms at about the same time as Royal Ann (fig. 10), and the average bloom period also overlaps well with those of Van, Mona, Bing, Larian, and Lambert. Controlled pollination tests indicate that Berryessa may be satisfactorily cross-pollinated by Mona, Royal Ann, Van, Moreau, and Starking Hardy Giant. Berryessa pollen in controlled tests fertilized the flowers of Bing, Early Burlat, Jubilee, Bada, and Mona. It is assumed, therefore, that Berryessa will also serve as a satisfactory pollinator for Royal Ann, Van, Moreau, and Starking Hardy Giant, and that Jubilee and Bada will serve as effective pollinators for Berryessa.⁵

Berryessa is well liked in San Joaquin County, where it is considered a logical replacement for Royal Ann because of its large size, quality, and relatively low production of fruit doubles.

Berryessa is considered suitable for the same trade that uses Royal Ann. It is excellent for shipping, fresh-fruit consumption, and canning. Although it makes an excellent brined product, the fruit is usually too large for an ideal brining cherry.

⁵ See footnote 2 on page 6.



Fig. 8. BADA.

BADA

Bada (pronounced bă'dă) is introduced as a supplement or replacement for Royal Ann. It has produced no fruit doubles, even in years when Royal Ann had as high as 25 per cent doubles; it is highly resistant to fruit-cracking and is effectively cross-pollinated by Bing.

Bada resulted from a cross made in 1940 between a selection (female) of unknown parentage and Ord. It has been tested as University of California Selection 19A-4.

Bada (fig. 8) ripens an average of four days before Royal Ann at Davis (table 1). The skin is glossy, cream-colored, with medium to high blush. It is similar to Royal Ann in texture but more resistant to bruising. The average fruit diameter of Bada over a period of eight years is about the same as that of Royal Ann, but the range in average size of Bada fruit is not as great, evidently because it is not reduced as much by heavy cropping as Royal Ann.

The fruit is heart-shaped when viewed with the suture side directly toward or away from the observer, being smooth, symmetrical, and about equal in breadth and length (fig. 9). The suture usually is inconspicuous or barely conspicuous. In some years a small percentage of the fruit has indented sutures. In some specimens the suture is slightly raised near the cavity. With the suture to one side, the fruit appears round-conic and symmetrical, with the stem in the center (fig. 9).

The outline of the fruit, as seen when the apical end is toward the viewer, is oval but often slightly flattened on the suture side (fig. 9). The stylar scar averages 1.04 mm in diameter, usually protrudes slightly, and is off-center from the apex, being closer to the suture side. The apical end is rounded or pointed enough so that the fruit will not stand alone on its apex.

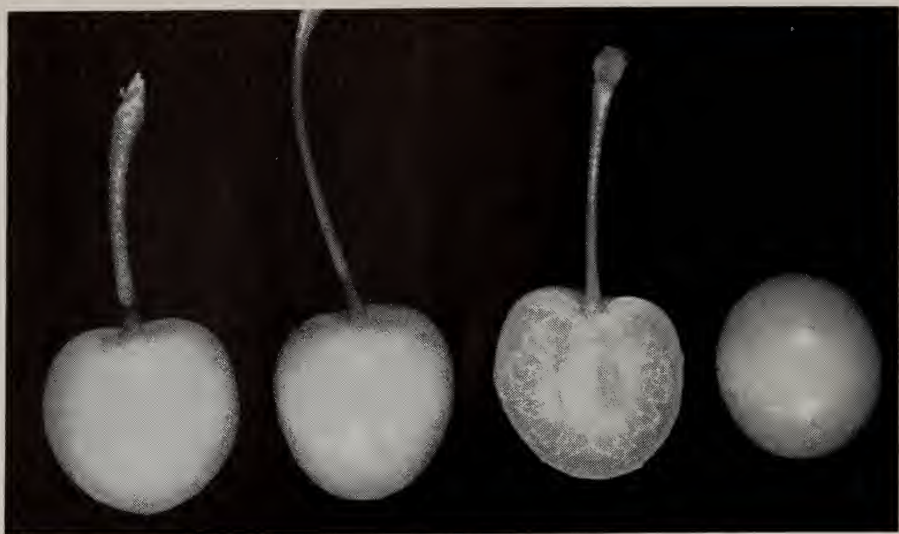


Fig. 9. Bada. Bleached fruit removed from brine. Left to right: Fruit with suture side directly away from observer; suture to one side; median lengthwise section; apical end.

The cavity is deeper than in most standard varieties and medium in width (figs. 8, 9).

The pedicel (figs. 8, 9) is medium in length, longer and thicker than those of Royal Ann and Bing, green, and firmly attached to the fruit. The pedicels may be separated from the fruit with less pull than is required for Royal Ann, and stemming seldom causes tearing of the cavity.

The cream-colored flesh has about the same firmness as Royal Ann, is meaty, fine-textured, and moderately juicy. The juice is clear. The delicious flavor is sweet and mild, being less tart than Royal Ann.

The stone is medium large and ranges from free to slightly clinging to the flesh (figs. 8, 9).

Bada is very resistant to fruit-cracking, and fruit doubles have not been noted in many years of testing.

Bada trees are early-bearing, productive to very productive, moderately vigorous, and upright-spreading. Stockton Morello rootstock dwarfs the tree considerably, since a 22-year-old tree on this stock at Davis had a trunk diameter of 11.5 inches, averaging only 0.52 of an

inch of diameter growth per year. In the same block, a 15-year-old tree on mahaleb rootstock was also small for its age, having a trunk diameter of 10.0 inches and averaging 0.67 of an inch of trunk diameter growth per growing season. Stockton Morello also dwarfs the standard cherry varieties.

Bada leaves are obovate and medium in size (figs. 8, 11e). Their petioles are short to medium in length, thin to medium in thickness, and usually hairless, although occasional scattered hairs may be present. Glands are variable in number and size, but most petioles have two small oval or reniform glands, which are tan or purple.

Bada blooms relatively late, between Lambert and Jubilee (fig. 10), but its bloom period sufficiently overlaps those of Van, Mona, Bing, Larian, Royal Ann, and Berryessa for good cross-pollination. Controlled pollination tests indicate that Bada may be satisfactorily cross-pollinated by Bing, Royal Ann, Larian, Berryessa, and Black Tartarian. In some years, however, Black Tartarian may be past full bloom before many Bada flowers are open. Bada pollen in controlled tests gave satisfactory fruit sets on Larian,

Bing and Jubilee. Since Royal Ann, Black Tartarian, and Berryessa pollen gave good fruit sets on Bada, it is reasonably safe to assume that Bada pollen will also effectively cross-pollinate these varieties.⁶

Bada is excellent for shipping and fresh-fruit consumption, as well as for canning and brining. Evidently it may satisfactorily replace Royal Ann for these markets. The fresh fruit has a long shelf

life, remaining glossy with no shriveling of stems after several days at room temperature.

It is felt that Bada would be a good companion variety for Berryessa, since their bloom periods coincide well enough for cross-pollination and their fruit may be harvested at about the same time. Bada is enough smaller than Berryessa to be more satisfactory for brining.

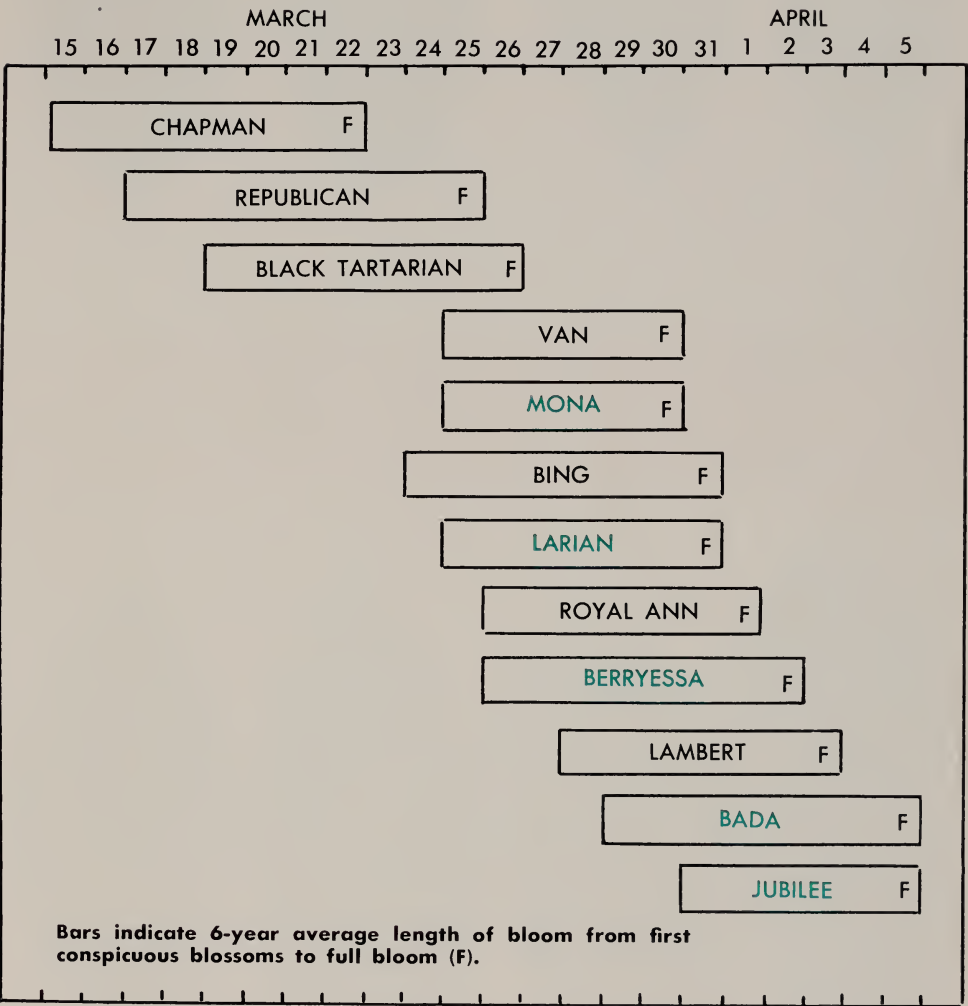


Fig. 10. Comparison of bloom periods of new with standard varieties of sweet cherries at Davis, California.

⁶ See footnote 2 on page 6.

[17]



a. MONA

Fig. 11. A comparison of leaves

b. LARIAN





c. JUBILEE

of the new sweet cherry varieties.

d. BERRYESSA





e. BADA

Acknowledgments

Mr. Guy L. Philp was in charge of the cherry-breeding program from its initiation in 1934 until his death in 1947. The authors acknowledge their indebtedness also to Dr. George Nyland, Department of Plant Pathology, for advice and assistance through the years. They are grateful likewise for the generous assistance given by the several University of California Farm Advisors and the cherry growers and processors who participated in the evaluation trials. Photographs are by L. R. McKinnon.